GEOGRAPHIC NEWS BULLETINS

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(The National Geographic Society is a scientific and educational Society, wholly altruistic, incorporated under the Federal law as a non-commercial institution for the increase of geographic knowledge and its popular diffusion.)

General Headquarters, Washington, D. C.

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NOTE TO TEACHERS: This is the first GEOGRAPHIC NEWS BULLETIN for the school year 1934-35. No BULLETINS were issued during summer vacation months. See important notice following Bulletin No. 1.

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THE FIRST STEP IN THE LIFE OF A CHOCOLATE DROP

Native workmen opening pods of the cacao tree in Trinidad (see Bulletin No. 4).

HOW TEACHERS MAY OBTAIN THE BULLETINS

The Geographic News Bulletins are published weekly throughout the school year (thirty issues) and will be mailed to teachers for one year upon receipt of 25 cents (in stamps or money order). Entered as second-class matter, January 27, 1922, at the Post Office at Washington, D. C., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in section 1103, Act of October 3, 1917, authorized February 9, 1922.

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Stratosphere Flight Yields Valuable Data

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THE TAKEOFF NEAR RAPID CITY

A SURPRISING and encouraging amount of scientific information was saved from the stratosphere expedition of the National Geographic Society and the U. S. Army Air Corps, which started from the Black Hills of South Dakota shortly after sunrise on July 28, and came to grief ten hours later in southern Nebraska when a rip occurred in the under surface of the balloon. The gondola crashed, but the flyers, Major William E. Kepner, Capt. Albert W. Stevens, and Capt. Orvil A. Anderson, jumped and were landed safely by their parachutes.

The saving of information from the crushed gondola after its fall is due to the use of photography for making automatic records, a scheme worked out in great part by Capt. Albert W. Stevens, scientific observer on the flight and one of the outstanding photographers of the Army.

Parachute Saves the Spectrograph

One large and heavy instrument—a special spectrograph for the study of the direct rays of the sun at great heights—was saved intact, along with its photographic records. This instrument was suspended from the gondola in a basket, by 500 feet of rope. A parachute was attached just above the basket. As the disabled balloon approached the earth the rope was cut, and the parachute carried its burden safely to earth.

Despite the force with which the gondola and its cargo struck the earth, a number of photographic film records inside were saved. One of these showed temperature inside and outside the gondola, and degree of sun and sky brightness, with the time of each observation.

The films from two spectrographs carried inside the gondola were partly fogged by exposure to light at the time of the crash, but a sufficient length of them was preserved to give additional information to that obtained from the spectrograph saved by parachute.

One of the most interesting records showed the greatly increased intensity of cosmic rays as the balloon rose into the skies. This record and those saved from other instruments used to "spy" on cosmic rays, and to tell less simple facts about them, are now being studied in laboratories in order that their full meanings may be brought out.

Many Heavy Instruments

The National Geographic Society-U. S. Army Air Corps Stratosphere Expedition was in many ways the most unusual to penetrate the upper reaches of the atmosphere. The "Explorer," the huge balloon which lifted the gondola, was the largest free balloon (as distinguished from dirigibles) ever built—three-and-a-half times the size of the largest balloon previously constructed. The balloon was made of such great size (a gas capacity of 3,000,000 cubic feet) so that it could lift instruments of full laboratory size, and therefore of great accuracy.

Small, unmanned balloons, which recently have been sent to great heights, can carry only small, light instruments, which obtain such simple information as temperature, air pressure, and changes in cosmic ray intensity. When it is desired to study other aspects of cosmic rays, such as their penetrating power and the directions from which they come, sturdy, heavy instruments must be used, and there must be operators along to adjust them.

One of the cosmic ray meters taken to a height of 11½ miles by the "Explorer," had a shield of lead around it six inches thick, and weighed 600 pounds. Such instruments have been taken heretofore no higher than to the tops of mountains, less than four miles above sea-level.

The compressed-air balloon valve invented by Captain Stevens worked without a hitch

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Photograph by Capt. Albert W. Stevens

THE WASHINGTON MONUMENT DOMINATES THE CAPITAL'S SKYSCRAPERLESS DOWNTOWN

A dark line across the face of the great shaft, about a third of the distance from the ground, tells its own story. Here, in 1854, building was halted due to lack of funds. Twenty-two years later construction work was resumed and the capstone was placed in 1884. To the right of the Monument is the huge new Department of Commerce building. The White House, left center, stands at the foot of 16th Street, along which are many embassies and the headquarters of the National Geographic Society (see Bulletin No. 3).

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Exeter, "the Ever Faithful City," Honors Coleridge

EXETER, ancient capital of England's southwest, and county town of lovely Devon, this summer observed the 100th anniversary of the death of Samuel Taylor Coleridge by a loan exhibition of the work of the famous poet, philosopher and critic, best known, perhaps, as the author of "The Ancient Mariner." Coleridge was born in Ottery St. Mary, a small Devon town near Exeter.

The exhibit, organized by members of University College of Southwest England, was held in the Royal Albert Memorial Museum on Queen Street, almost within the shadow of the ruins of Rougemont Castle, an historic stronghold mentioned by Shakespeare in "Richard III."

This literary anniversary follows close on the heels of the 800th birthday of Exeter's noted cathedral, which was begun during the reign of William the Conqueror. The site chosen had already been twice occupied by Saxon churches, the first built by Aethelstan, the second by Canute.

Once a Roman Outpost

All the history and loyal, independent spirit of the west country is concentrated in Exeter, Queen Elizabeth's "ever faithful city." As a Roman town, Isca Damnoniorum, it is a little younger than Paris and as old as London. When the Romans left it in the fifth century it became the "Caer Isc" of the Britons, and the "Exancestre" of the Saxons.

During succeeding centuries it endured countless sieges. Saxons, Britons, Danes, and Normans fought to enter the walls. Later the loyal townsmen staunchly upheld their king in many a revolt. Exeter still remembers the time that Edward the Confessor spent Christmas there, and the day when William of Orange entered the gates in state.

Modern Exeter occupies a broad ridge of land on the left bank of the river Exe. At the head of this ridge, hidden by ivy, and set in a wide shaded park, are the ruins of Rougemont Castle, built by William the Conqueror.

Mol's Coffee House, Near Cathedral

Narrow, stone-paved streets wind between ancient timbered houses, crumbling chapels, and fine old churches. Exeter is a veritable city of churches. In the time of William the Conqueror she possessed no less than twenty-nine! Across the square from the cathedral stands Mol's Coffee House, favorite meeting place of those gay adventurers of Devon—Drake, Hawkins, Gilbert, and Raleigh.

Visitors to Exeter's Cathedral Close (yard) to-day find that the only remaining parts of the original Norman structure are two low massive towers at either end of the transept (see illustration, next page). The rest of the cathedral was completely rebuilt during the fourteenth century in the rich style of Decorated Gothic.

Walter de Stapeldon, Bishop of Exeter, and one of the foremost patrons of English art and letters during the early fourteenth century, had a large share in this transformation. It was Stapeldon, also, who in 1314 founded Exeter College, Oxford; and in 1332, Exeter Grammar School.

Upon entering the cathedral one receives an impression of great length and remarkable symmetry. Each part is balanced, and the long, low effect is increased by an unbroken roof line extending through nave and choir. On the wall of the north transept hangs a great clock which has ticked since the days of Edward II

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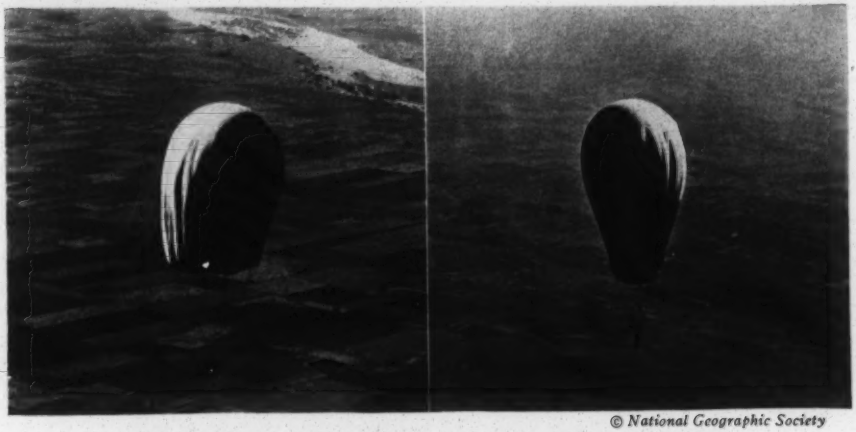
throughout the flight under conditions that might have been disastrous if only the old-style, hand-operated valve had been available.

The many instruments in the gondola operated perfectly, even during the period of descent. The flyers were never out of conversational touch with the earth by radio. Their statements during the last half hour constitute perhaps the most dramatic program ever put on the air.

Note: See also "Exploring the Stratosphere," *National Geographic Magazine*, October, 1934; "World's Largest Free Balloon to Explore Stratosphere," July, 1934; "The Geographic's Stratosphere Expedition," April, 1934; "Ballooning in the Stratosphere," March, 1933; and "Exploring the Earth's Stratosphere," December, 1926.

Bulletin No. 1, October 1, 1934.



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THE BATTERED STRATOSPHERE BAG STILL HOLDS TOGETHER

Snapped only about a minute apart, over Nebraska farms, while the plane from which they were taken spiraled downward, these photographs show two phases in the behavior of the descending balloon. The torn fabric has been sucked up into the bag on the left. On the right it is shown hanging downward. The Platte River appears in the upper left background.

A Gift to Education—How Teachers May Cooperate

THE GEOGRAPHIC NEWS BULLETINS are a gift of the National Geographic Society to education. This is the first issue of 30 numbers, each containing five illustrated Bulletins, to be mailed weekly during the current school year. The Bulletins report the geography of recent events of world importance.

Because these Bulletins represent a substantial gift to schools from The Society's educational fund, the expense of advertising or circulation promotion cannot be undertaken as would be the case with a commercial publication. The Society must rely upon supervisory officials and teachers to call them to the attention of their colleagues who might use them effectively. This should be done promptly so that applicants may be put upon the mailing list to receive the early issues.

The following order form may be used:

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Washington Monument Getting First Bath

THE world's tallest and one of its most famous obelisks, the Washington Monument, which towers over the City of Washington, is framed in steel scaffolding in preparation for its first bath. At the same time, the lofty structure will also have some of its age-worn wrinkles and cracks "ironed out" by stonemasons.

A memorial to George Washington, the Monument had many "growing pains" from the time it was discussed in Congress, shortly after the death of Washington in 1799, until its capstone was set in place December 6, 1884.

December 23, 1799, John Marshall, famous fellow-Virginian of George Washington, introduced a resolution in the House of Representatives specifying that "a marble monument be erected by the United States in the City of Washington, and that the family of General Washington be requested to permit his body to be deposited under it."

Much Talk, but Little Action

Martha Washington agreed to the provisions of the resolution; but nothing was done. In 1816 and 1819, the memorial was discussed in the Halls of Congress, and again in 1824 and 1825. And again, nothing was done to carry out the provisions of the resolution.

Displeased with the failure of Congress to erect a memorial, citizens of Washington organized in 1833 to promote the project. That body became the Washington National Monument Society, with Chief Justice John Marshall as its president. The Society invited American artists to submit designs for a million-dollar edifice. Robert Mills won the competition, but his design was not accepted. The Mills plan called for a beautiful circular stone building, from the center of which rose a 500-foot obelisk.

In 1848, Congress officially authorized the Washington National Monument Society to erect a monument, and permitted the President of the United States and officials of the Society to choose a suitable site. L'Enfant, in his plan of Washington, had provided for a statue of Washington on horseback, but the spot named then was a marsh. Thus the present site, only a few hundred feet away on more solid ground, was chosen.

Corner Stone Laid in 1848

On Independence Day 1848, amid colorful ceremonies, the corner stone, filled with historic documents, was laid. Slowly for six years the obelisk rose skyward to a height of 154 feet. Then dissension in the Society, and lack of funds, caused construction to cease (see illustration, page 2).

President Grant, in 1876, signed a bill which provided that the Government take over and complete the erection of the shaft. Engineers discovered, after careful examination, that the foundations were not strong enough for so lofty an obelisk.

So they began what was called, at that time, "one of the outstanding engineering feats of the world"—rebuilding the Monument's foundations without damage to the structure. Then, stone by stone, the shaft rose until the pyramidal capstone was placed on December 6, 1884.

The memorial was opened to the public October 9, 1888. Lining its inner walls are stones presented by States, cities, fraternities, fire companies, lodges, and

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in the fourteenth century. It has two dials, one showing the hours and the moon's phases; the other recording the minutes. In the library is the ancient Codex Exoniensis, a ninth century collection of Anglo-Saxon poetry, which has been in the possession of the cathedral since the eleventh century.

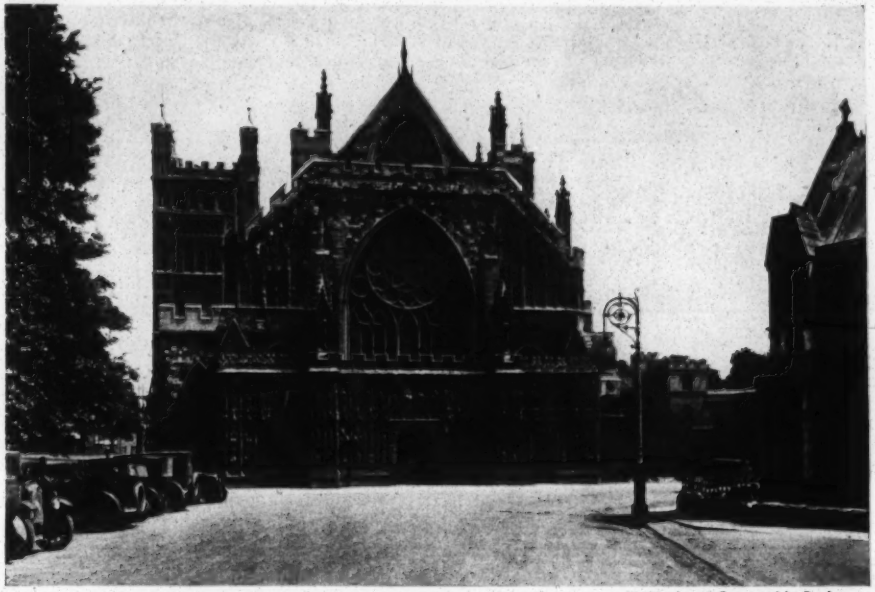
England's Oldest City Hall

The Guildhall, with its overhanging façade, is said to be the oldest municipal building in Great Britain. Here the wealthy merchants of the city transacted their business in the time of Queen Elizabeth, when Exeter was noted for the manufacture of woolens. It was also during Elizabeth's reign that the Exeter ship canal was built, the first canal in England to permit sea-going vessels to reach an inland port.

Exeter to-day has a population of over 59,000, and is an important center of agricultural trade. Its various industries include brewing, paper making, and iron founding. Tourist traffic during the summer season is heavy. Daily motor busses leave the huge city terminal for all parts of Devon and Cornwall.

Note: Students preparing projects or units about English life, customs, literature, history and industries will find other helpful references and many photographs in "When the Herring Fleet Comes to Great Yarmouth," *National Geographic Magazine*, August, 1924; "Vagabonding in England," March, 1934; "Beauties of the Severn Valley," April, 1933; "Between the Heather and the North Sea," February, 1933; "Some Forgotten Corners of London," February, 1932; "Visits to the Old Inns of England," March, 1931; "Oxford, Mother of Anglo-Saxon Learning," November, 1929; "Down Devon Lanes," "Through the English Lake District Afoot and Awheel," and "A Tour in the English Fenland," May, 1929; "Vacation in a Fifteenth Century English Manor House," May, 1928; "London from a Bus Top," May, 1926; "A Char-a-Bancs in Cornwall," December, 1924; "Through the Heart of England in a Canadian Canoe," May, 1922; and "One Hundred British Seaports," January, 1917.

Bulletin No. 2, October 1, 1934.



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EIGHT CENTURIES HAVE LOOKED DOWN ON EXETER'S CATHEDRAL

Set on a wooded hill, in a wide and delightful close, this architectural gem is the glory of England's West Country. The building is a blend of several different styles of Gothic, with square Norman towers. The Cathedral library contains the famous "Codex Exoniensis," a 9th-century collection of early Anglo-Saxon poetry, and the thirteen bells in the south tower form the heaviest peal in the world.

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Do You Know Difference Between Chocolate, Cacao and Cocoa?

THE fight being waged to save, from a destructive plant disease, the famous cacao plantations of Trinidad, West Indies, brings into the news an unusual and very widespread industry.

Not only does the cacao bean supply the producers of candies and sweetmeats with a solid ingredient and flavoring, but it furnishes "the makings" for a hot beverage, surpassed in world importance only by coffee and tea.

Chocolate was a gift to man's palate from the Western Hemisphere. Like tobacco, the potato, and a number of other plant products, it was taken back to Europe by explorers soon after Columbus opened the road to the New World, and launched on the way that has led to world markets.

Three Terms Used in Trade

In trade circles to-day three terms are used: chocolate and cocoa, and cacao. The tropical tree which is the source of chocolate is called the *cacao*. In its leathery, cucumberlike fruit are cacao pods which contain *cacao* beans. But when the beans are roasted and ground, and much of the fat is pressed out, the remaining brown substance (ground to a dry powder), is *cocoa*. If the fat is not pressed out, the darker substance is *chocolate*.

Credit for the manufacture of chocolate from the hidden seed of an obscure fruit belongs to the original inhabitants of Mexico. In 1519, when Hernando Cortez invaded that country, he discovered that the cacao tree was widely cultivated. The natives made a drink called "chocolatl" or "cacahuatl," from which have come the names "chocolate" and "cocoa." Frothing pitchers of chocolate were served by Montezuma when he entertained Cortez.

Students of American native customs have estimated that the drink was in use 1,000 years before the arrival of Europeans. According to Mexican mythology the seed of the cacao tree was carried from a New World version of the Garden of Eden into Mexico by Quetzalcoatl, God of Air. The fruit, it is related, was a favorite food of the gods.

The great Swedish botanist, Linnaeus, christened the fruit *Theobroma cacao*, meaning in Greek "food of the gods."

When 100 Cacao Beans Bought a Slave

Cacao was used as a means of barter and the payment of tribute by the Aztecs and Mayans. A man's wealth was often judged by the number of cacao beans he possessed. In Mexico a good slave could be purchased for 100 beans.

The high food value, low cost of production, and many uses of cacao have resulted in its widespread growth in practically all tropical countries. The wet tropical areas of the West African colonies of Great Britain and Portugal, and the South and Central Americas are especially well suited to the cultivation of the trees.

Introduction of cacao trees into Africa has resulted in a remarkable growth of the industry and economic development of the continent. The Gold Coast has taken first place away from Brazil in the world's production of cacao. What were once trackless and useless African jungles, inhabited only by savage bushmen and wild animals, to-day are cacao plantations, operated for the most part by natives.

United States Uses Most Chocolate

As an international commodity, the cacao bean has grown in importance to such an extent that the United States alone, in 1933, imported 474,270,000 pounds, valued at $18,739,000. The United States is by far the largest consumer, cacao ranking sixteenth in value on our list of imports. Germany, Great Britain, and the Netherlands follow in the order named.

For many years the Spaniards of South America and of some of the West Indies kept the cacao industry to themselves. Chocolate was introduced into Spain by Cortez and his *Conquistadores* about the beginning of the sixteenth century, but the process of chocolate manufacture was kept a secret for almost 100 years.

In 1606, an Italian discovered the method of preparation. Shortly afterwards, monks and travelers spread the news throughout Europe. The seventeenth and eighteenth centuries found the popularity of the drink steadily increasing. Cocoa houses were established in England, as well as on the continent.

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other organizations from all parts of the country. Stones from many foreign nations also have places in its walls.

Visitors who choose to use the steel stairway in the Monument may examine these historic tablets in detail.

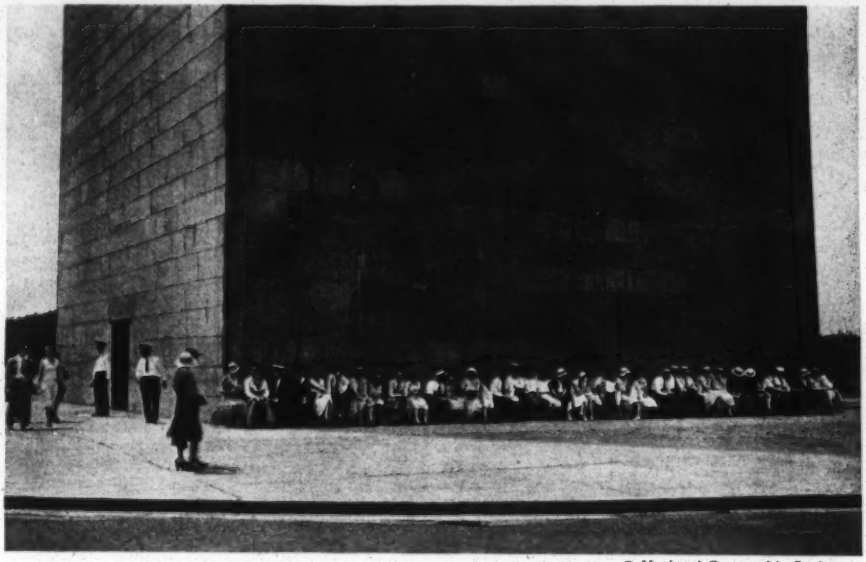
Cost More Than $1,000,000

The Monument cost slightly more than $1,000,000. It is 555 feet 5⅛ inches high and stands on a base 55 feet square. The lower walls are of granite faced on the outside with marble. They are 15 feet thick up to about 500 feet; the upper walls, of marble only, are 18 inches thick. It is estimated that about 23,000 stones were used in the shaft's construction.

There are eight windows at the 504-foot level, from which thousands of visitors annually view the entire District of Columbia and several counties of Virginia and Maryland.

Note: See also "Washington through the Years," *National Geographic Magazine*, November, 1931; "Approaching Washington by Tidewater Potomac," March, 1930; "Unique Gifts of Washington to the Nation," April, 1929; "America from the Air," July, 1924; "The Transformation of Washington," "The Lincoln Memorial," "The Capitol, Wonder Building of the World," and "The Sources of Washington's Charm," June, 1923.

Bulletin No. 3, October 1, 1934.



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IN SUMMER THE WAITING LINE FORMS IN THE SHADE

With nearly 1,000,000 visitors a year, the Washington Monument is one of the world's most popular free attractions. In 1926 a new high speed elevator was installed in the shaft. It can accommodate 30 persons a trip and make 12 round trips an hour. A few hardy souls, however, still climb the steps, and many go up by elevator and return on foot to view the memorial tablets that line the inside of the Monument. Although this photograph was taken at least 50 feet from the base of the Monument, it clearly reveals that many stones are chipped, and cracks have been widened by the action of heat and cold. These are now being repaired by workmen, who have swathed the Monument in steel scaffolding from bottom to top.

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Nanking Seeks a Place Beside London, Washington, and Paris

ALTHOUGH most nations having embassies or legations in China still maintain them in Peiping (Peking), the old capital, the city of Nanking, the Chinese insist, is the official seat of China's government, and extensive plans are being carried out to make it a modern and progressive city.

Because huge sums have been expended by foreign nations in building embassy quarters at Peiping, however, it is unlikely that these will be moved to Nanking for some time. Great Britain, France, Japan, and the United States are among the nations that have their diplomatic chiefs at Peiping, with consuls at Nanking. Soviet Russia, on the other hand, reverses this arrangement, with its embassy at Nanking and only a consul at Peiping.

Peiping may remain the bay window of China's international relationships, but Nanking is already the workshop. Nanking possesses many advantages as a capital. Because of its central location, 210 miles inland on the south bank of the Yangtze River, backbone of Chinese commerce; its access to Shanghai's wealth; its comparative nearness to Canton; and its freedom from association with the Manchus, Nanking is becoming a more and more important factor in the story of new China.

Pagodas of Cement Rising

Blueprints of extensive beautification plans for Nanking are being studied by the National Government. Development of the area near Sun-Yat-Sen's Tomb, outside Nanking's 22-mile long wall, is progressing rapidly. Like pouring new wine into old bottles, an American builder is pouring cement into Chinese forms to achieve a west-east style of architecture for China's new capital.

A New York architect himself insisted that his employers, the National Government, preserve China's characteristic form, hence many of the new buildings at Nanking are multiple-storied pagodas of cement. The Government recently completed the first of these new-type buildings, a seven-story cement pagoda.

They are signs of the times, these new buildings. Nanking is growing up, stirring again with power it once knew as capital under the Mings. After the Mings, Peking became the Chinese capital, and the world almost forgot Nanking. But with the infusion of new life into the republican form of government in 1928, China again chose more centrally-located Nanking as the seat of government. Today, Nanking has approximately 650,000 residents.

Highway to Shanghai Being Built

Besides erecting modern buildings, such as the new Central Hospital, the Ministry of Railways, and the Ministry of Communications, Nanking is laying roads, asphalt roads and good ones. About 100 miles of wide asphalt boulevards wind in and out of the city. The Nanking-Shanghai highway, of macadam and dirt, will be finished within a year. It will link the capital more closely to China's financial and commercial seaport metropolis. A government railway connects Nanking with Shanghai (eight hours), and with Peiping (about 36 hours). River steamers take travelers to Shanghai or to Hankow and beyond.

Nanking is air-minded. Its skies hum with the noise of American-made propellers on American planes. China's National Aviation Company, in which an American corporation is a minority stockholder, maintains a daily flight schedule between Shanghai, Nanking, Hankow, Chungking, and Chengtu. Weekly schedules

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Once Sold at $5 a Pound

Chocolate, however, was a luxury which only the rich could afford, since it sold for as much as five dollars a pound. To-day, good chocolate can be purchased for a few cents a pound, and is consumed in one form or another—candy, sodas, cakes, sundaes, beverages, etc.—by millions of people the world over.

Modern methods of cocoa and chocolate manufacture differ little from those used by primitive people centuries ago. In Mexico, the natives roasted the beans and then ground them between two warm flat stones until a fine paste was obtained. This was sometimes mixed with maize (corn) and flavored with vanilla and spices. The paste was molded into forms desired and allowed to cool.

Modern preparation of the commodity is more scientific and thorough, but the principal steps taken are much the same.

Cocoa Butter Also Important

Cocoa butter is an important by-product of the cacao bean, which contains 50 per cent fats. The butter, removed by crushing the beans under hydraulic pressure, is extensively used in confectionery, and in drugs.

Almost every household has some commodity that contains this vegetable fat. Cocoa butter is an ingredient of many soaps, pomades, perfumes, ointments, plasters, and cosmetics.

Note: For other data about cacao and countries where it is grown see: "Hispaniola Rediscovered," *National Geographic Magazine*, January, 1931; "Gigantic Brazil and Its Glittering Capital," December, 1930; "Jamaica, the Isle of Many Rivers," January, 1927; "On the Shores of the Caribbean," February, 1922; and "Staircase Farms of the Ancients," May, 1916.

Back copies of the *National Geographic Magazine* may be consulted in your school or local library, or they may be purchased from the headquarters of the National Geographic Society in Washington, D. C.

Bulletin No. 4, October 1, 1934.

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THE SECOND STAGE IN THE LIFE OF A CHOCOLATE DROP

After the cacao beans, sources of cocoa and chocolate, have been removed from their fruit-like pod (see cover illustration), they are spread out in the sun to dry before being sacked and shipped to the roasting and crushing mills. This scene shows a big cacao plantation near Ilhéos, Brazil. The low, peaked roofs in the background slide on rails, and may be hauled out over the drying floor if rain falls.

are flown by ships of the Eurasia Aviation Company (Sino-German) between Shanghai, Nanking, Loyang, Peiping, Sian, Lanchow, and Tihwa.

No great industries will be found in the new capital, but Nanking brocades, made in homes, are world-famous. The Chinese in this region are farmers, small-shop keepers, government employees, soldiers, policemen, hotel keepers, rickishaw-pullers, carriage and taxi drivers, or ordinary laborers.

Cooperation on the part of the United States has meant much to Nanking's progress. The city shelters about 300 American, eighty British, and forty French residents. Four American Christian churches joined forces to found the University of Nanking. Three American physicians aid in ministering to Nanking's sick. Five American foreign service officials and several business men make their headquarters in the city. American oil and steamship companies maintain offices there, and Chinese agents handle a number of different American automobiles and radios. Over Nanking's streets roll 2,000 automobiles, 90 per cent American-made.

It must not be supposed that Nanking is without its troubles. Chief among them is sanitation. Under normal conditions Nanking's sewage is disposed of efficiently enough, but when the Yangtze rises to flood heights, as it often does, drainage systems fail to function, the city's streets are inundated, and Nanking's health is endangered.

Note: For additional references to Nanking and China generally see: "Glory That Was Imperial Peking" and "Explorations in the Gobi Desert," *National Geographic Magazine*, June, 1933; "Cosmopolitan Shanghai, Key Seaport of China," September, 1932; "Konka Risumgongba, Holy Mountain of the Outlaws," July, 1931; "The Glories of the Minya Konka," October, 1930; "The World's Greatest Overland Explorer," November, 1928; "Life Afloat in China" and "New China and the Printed Page," June, 1927; "Farmers Since the Days of Noah," April, 1927; and "Through the Great River Trenches of Asia," August, 1926.

Bulletin No. 5, October 1, 1934.

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A "LITERARY STOCKYARD"—NANKING'S CRUMBLING EXAMINATION HALLS

For hundreds of years young Chinese who wished to enter the civil service of their country came to these tiled sheds. Each was assigned to a prisonlike cell and kept there in solitary confinement until he had finished writing essays on Confucian philosophy, which constituted the examination. This strange system was abolished in 1904.